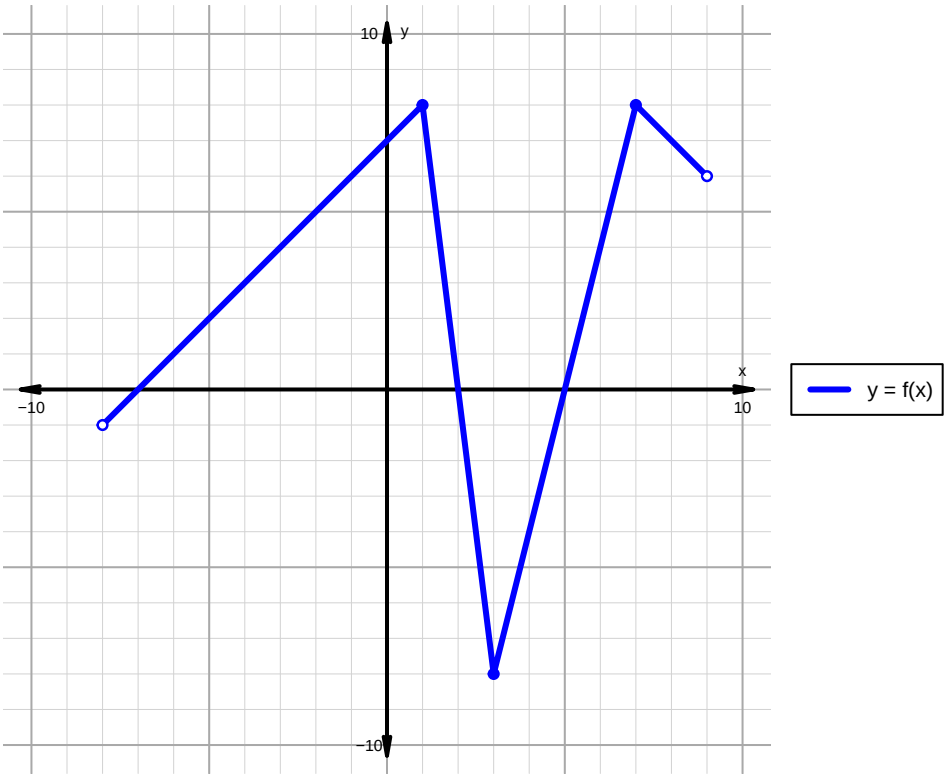
Name: Date:

Intervals, Transformations, and Slope Solution (version 23)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7, 2) \cup (5, 9)$
Negative	$(-8, -7) \cup (2, 5)$
Increasing	$(-8, 1) \cup (3, 7)$
Decreasing	$(1, 3) \cup (7, 9)$
Domain	$(-8, 9)$
Range	$(-8, 8)$

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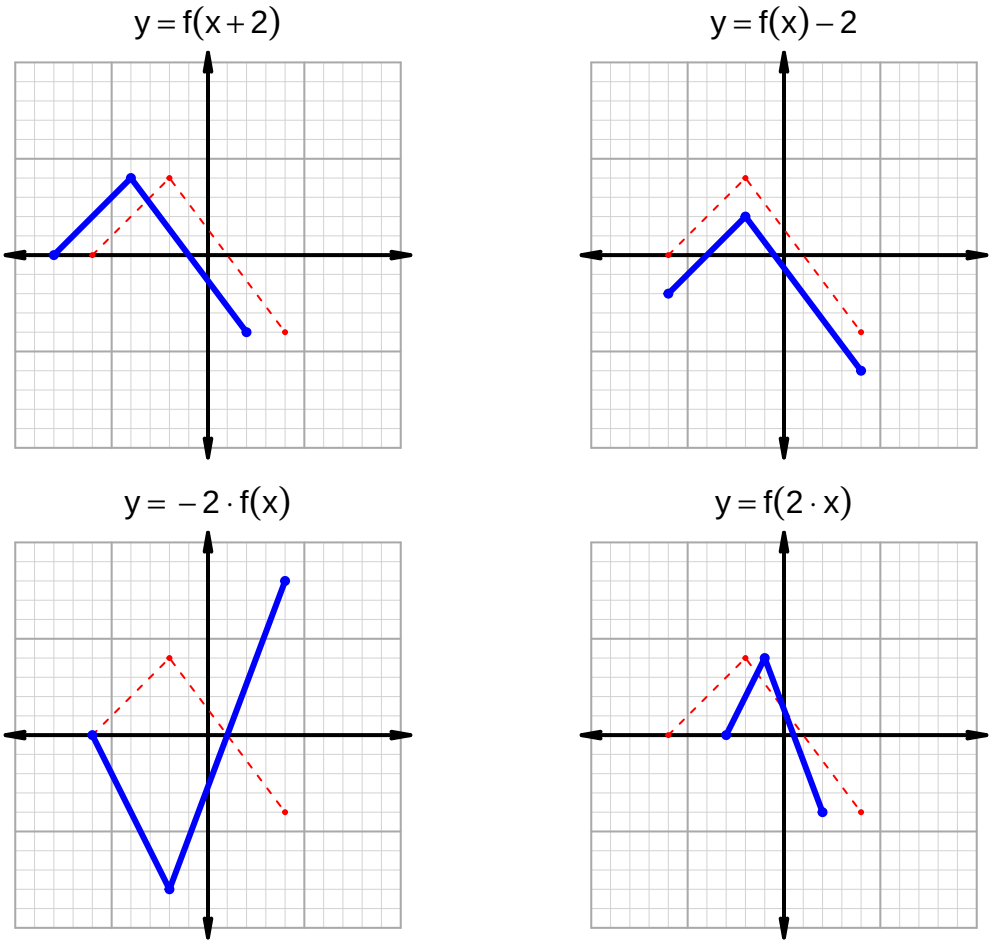
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 55$ and $x_2 = 75$. Express your answer as a reduced fraction.

x	$g(x)$
55	81
75	86
81	75
86	55

$\frac{f(75)-f(55)}{75-55} = \frac{86-81}{75-55} = \frac{5}{20}$

The greatest common factor of 5 and 20 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{1}{4}$$